

## REMARKS

Claims 17-46 are currently pending in the application; Claims 17 and 32 are independent. Applicants have amended Claims 18-20, 23 and 32-35 by this Amendment. Support for the amendments is found, for example, at Page 4, Paragraph 2 to Page 6, Paragraph 4 and Page 9, Paragraph 4 to Page 10, Paragraph 4 of the specification, and Figures 5-7 of the drawings. No new matter has been introduced by way of this Amendment. Accordingly, favorable reconsideration of the pending claims is respectfully requested.

At the onset, Applicants gratefully appreciate the Examiner's indication that the previous rejections of the pending claims based on U.S. Patent No. 6,102,702 to Folsom et al., and U.S. Patent Application Publication No. 2003/0224328 to Sopian have been overcome in lieu of the previous entered amendments and arguments.

In this instant Action, the Examiner has objected to Claims 18-20 and 33-35 as allegedly containing recitations inconsistent with their recitations of the independent claims. Applicants have amended Claims 18, 19, 33 and 34 to further limit the bore recited in Claims 17 and 32. Applicants have also amended the subject matter of Claims 19, 20, 34 and 35 to "the intraosteal dental implant", which is consistent with the subject matter of Claims 17 and 32. Accordingly, the above objection is overcome.

The Examiner has objected to Claim 22 for informalities. Applicants believe that it is an inadvertent error that the Claim 22, instead of Claim 23, has been identified having informalities. Applicants have amended Claim 23 to overcome the informalities.

The Examiner has rejected Claims 17-20, 31 and 46 under 35 U.S.C. §102(b) as allegedly anticipated by U.S. Patent No. 6,648,643 to Hollander et al., (hereinafter "Hollander"). Applicants respectfully traverse the rejection in light of the following remarks.

To maintain a claim rejection under 35 U.S.C. §102, a reference must disclose each and every element of the claim. Hollander fails to do so.

Claim 17 is directed to an intraosteal dental implant including a bore in the form a blind hole, the bore being shaped and devised such as to rotationally secure an abutment receivable in the dental implant. The dental implant has an outer profile substantially radially symmetrical to a central axis. The bore is provided with a substantially cylindrical sleeve extending substantially coaxially to the dental implant. The dental implant includes an inner neck surface for engaging a complementary surface of the abutment. The sleeve extends beyond the inner neck surface to define an intersection curve between the inner neck surface of the dental implant and the sleeve, the intersection curve not lying in a plane perpendicular to the axis of the dental implant.

Hollander is directed to an implant-abutment interface and assembly (see, Figures 2 and 2A of Hollander). The implant (22) has an implant body (23) defining an axial threaded bore (28) therein and a collar (32) for engaging an abutment (40). The collar has a radial surface (30) at the upper end of the collar and a plurality of axially elongate recesses (34) formed within the collar. The abutment has, at the lower end thereof, a plurality of projecting prongs (52) spaced by a plurality of channels (56). Upon assembling the abutment to the implant, the prongs are inserted into the recesses.

In the first instance, Applicants respectfully submit that the Examiner has incorrectly interpreted the abutment (40) as a disclosure of the “substantially cylindrical sleeve extending substantially coaxially to the dental implant”, recited in Claim 17 (see, Page 3, Lines 2-5 of the Action). Specifically, the Examiner has alleged that, “the bore is further provided with a substantially cylindrical sleeve 40 extending substantially coaxially to the dental implant 22,

wherein the dental implant includes an inner neck surface (radial surface 30) capable of engaging a complementary surface of the abutment, e.g., portion 54".

Applicants respectfully disagree with the Examiner's foregoing allegation. First, Hollander explicitly teaches that the "dental implant-abutment interface and assembly may be seen to include an implant 22 and an abutment 40" (*see*, Col. 3, Lines 25-27), and "[s]aid abutment 40 includes a proximal end 42, a distal end 44, an annular shoulder 45, an axial bore 48, a distally tapered collar 54" (*see*, Col. 3, Lines 58-61). The above description articulates two facts: the abutment is a complementary structure to be assembled with the implant but not a part of the implant; and the tapered collar is not an isolated element but an integral part of the abutment. Thus, in no event would a person of ordinary skill in the art consider the abutment 40 in Hollander as a sleeve included in the dental implant, which actually engages a complementary abutment. Also, the person would not consider an integral part of the abutment, namely the distally tapered collar 54, as an entire abutment, and, at the same time, consider the entire abutment as a sleeve of the dental implant.

In summary, Hollander fails to disclose a substantially cylindrical sleeve extending substantially coaxially to the dental implant, as recited in Claim 17.

In addition, the characterization of the abutment 40 as being a cylindrical sleeve is improper. As best seen from Figures 2 and 2A, the abutment consists of a first section with prongs 52 and U-shaped regions 56, a second section formed of the distally tapered collar 54, and a third chimney like section with a flat lateral surface 62. Specifically, the first section is a petal-like structure as shown in Figure 5 of Hollander, and the second section is a tapered structure having an annular shoulder as shown in Figure 3. Apparently, the abutment having the above three sections does not qualify as a **cylindrical** sleeve as defined in a standard dictionary (note that a cylindrical

body is defined in the Oxford Illustrated Dictionary 1975 as a “solid generated by a straight solid line moving without change of direction and describing with its ends any fixed curve, esp. circle”).

A copy of the relevant part of the dictionary is attached for the Examiner’s convenience.

Hence, even, *assuming arguendo*, the abutment is a sleeve; it is not a cylindrical sleeve as defined in the present application.

The Examiner has alleged that the elongate recesses (34) of Hollander disclose, “an intersection curve between the inner neck surface of the dental implant and the sleeve, the intersection curve not lying in a plane perpendicular to the axis of the dental implant for the intersection”, recited in Claim 17 (*see*, Page 3, Lines 6-8 of the Action).

First, as established previously, Hollander fails to disclose a sleeve recited in Claim 17. Thus, there is no premise in Hollander for providing an intersection curve between the inner neck surface of the dental implant and the sleeve.

Furthermore, Applicants respectfully submit that Hollander does not disclose an intersection curve between the abutment and the implant, but rather an intersection area or surface defined in the implant, at the inner of the petal-like outline on one hand and at the prongs 52, U-shaped regions 56 and tapered collar 54 of the abutment on the other hand.

Therefore, Hollander fails disclose each and every element of the Claim 17, from which Claims 18-31 and 46 depend. Accordingly, the rejection of Claims 17-20, 31 and 46 under 35 U.S.C. §102(b) is overcome, and withdrawal thereof is respectfully requested.

The Examiner has further rejected Claims 21-30 under 35 U.S.C. §103(a) as allegedly unpatentable over Hollander in view of U.S. Patent Application Publication No. 20030104337 to Cottrrell (hereinafter “Cottrrell”). Applicants respectfully traverse the rejection.

Claim 17, from which Claims 21-30 depend, is discussed above. Cotrrell is relied on for the alleged teaching of the additional limitations in Claims 21-30. The alleged teaching of Cotrrell does not ameliorate the underlying deficiencies of Hollander with respect to Claim 17. Thus, the hypothetical combination of Hollander and Cotrrell does not teach or suggest the combination of features recited in Claims 21-30. Accordingly, the rejection of Claims 21-30 under 35 U.S.C. §103(a) based on the combination of Hollander and Cotrrell is overcome and withdrawal thereof is respectfully requested.

The Examiner has further rejected Claims 32-35 under 35 U.S.C. §103(a) as allegedly unpatentable over U.S. Patent No. 5,752,830 to Suarez (hereinafter “Suarez”) in view of U.S. Patent No. 5,984,681 to Huang (hereinafter “Huang”). Applicants respectfully traverse the rejection in light of the following remarks.

Claim 32 recites an intraosteal dental implant including a bore in the form a blind hole, the bore being shaped and devised such as to rotationally secure an abutment receivable in the dental implant. The dental implant has an outer profile substantially radially symmetrical to a central axis. The bore is provided with a substantially cylindrical sleeve extending coaxially to the dental implant. The dental implant includes an inner neck surface from which the sleeve extends upwardly, the inner neck surface of the dental implant having a substantially conical shape with an imaginary tip offset from the axis of the dental implant.

Suarez discloses a dental implant having an outer piece (12) and an inner piece (30) (see, Figures 1 and 2 of Suarez). The outer piece has a bore for receiving the inner piece. The Examiner has interpreted the inner piece as a disclosure of the sleeve recited in Claim 32. However, in assembled status, the inner piece and the outer piece are flush with each other at the

upper ends thereof. Thus, Suarez does not disclose a sleeve extending upwardly from an inner neck surface, as recited in Claim 32, as amended.

Huang is relied on for the alleged teaching of an inner neck surface having an imaginary tip offset from the axis of the implant. Huang is directed to a dental implant (50) including a side through bore (24) for receiving a screw (32). However, Huang also fails to disclose a sleeve extending upwardly from an inner neck surface. Thus, the hypothetical combination of Suarez and Huang does not teach or suggest the combination of features recited in Claim 32, from which Claims 33-35 depend. Accordingly, the rejection of Claims 32-35 under 35 U.S.C. §103(a) based on the combination of Suarez and Huang is overcome.

In addition, Applicants respectfully disagree with the reasoning applied by the Examiner to combine Suarez and Huang. The Examiner has relied on the profile of the countersink of the side through hole (shown in Figure 6 of Huang) for the alleged teaching of an inner neck surface having an imaginary tip offset from the axis of the implant. Further, the Examiner has alleged that it would be obvious to one having ordinary skill in the art at the time the invention was made to modify Suarez by incorporating an additional bore with an inner neck surface offset from the implant's central axis for receiving an anchoring pit in order to effectively and securely anchor the implant to the alveolar bone and prevent the implant from rotating or loosening while a load or stress is being placed on the implant as explicitly taught by Huang (Column 6, Lines 28-42) (*see*, Page 4, Line 22 to Page 5, Line 3 of the Office Action).

The Examiner does not clearly articulate a reason why and how the countersink of Huang can be combined with the inner and outer pieces of the dental implant to result in the claimed invention, especially how Suarez can be modified by incorporating an additional bore in light of Huang to result in the claimed invention. The Examination Guidelines for Determining

Obviousness Under 35 U.S.C. 103 in View of the Supreme Court Decision in *KSR International Co. v. Teleflex Inc.*, Notices: Federal Register, Vol. 72, No. 195, October 10, 2007 ("Guidelines"), state "the key to supporting any rejection under 35 U.S.C. 103(a) is the clear articulation of the reason(s) why the claimed invention would have been obvious. The Supreme Court in *KSR* noted that the analysis supporting a rejection under 35 U.S.C. 103(a) should be made explicit." (Page 57528, Column 3, emphasis added). Specifically, in the instant case, the Examiner has provided a mere conclusionary statement of obviousness and has not provided a line of reasoning why one skilled in the art would combine and modify the Suarez teaching in light of the Huang teaching to arrive at the claimed invention, especially considering the fact that Suarez teaches an assembly dental implant while Huang teaches a commonly known fixing screw.

Furthermore, the countersink of Huang is not a disclosure of the inner neck surface defined in the application. It is well established that "claims are not to be read in a vacuum, and limitations therein are to be interpreted in light of the specification in giving them their 'broadest reasonable interpretation.' " *In re Marosi*, 710 F.2d 799, 218 USPQ 289 (Fed. Cir., 1983). It is respectfully submitted that, a person of ordinary skill in the art would not consider a general countersink for receiving a general screw as a disclosure of the inner neck surface of a dental implant for engaging a complementary surface of the abutment.

Accordingly, the hypothetical combination of Suarez and Huang is improper.

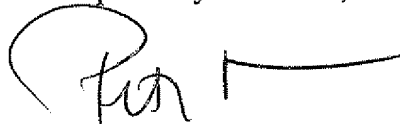
The Examiner has further rejected Claims 36-45 under 35 U.S.C. §103(a) as allegedly unpatentable over Suarez in view of Huang and further in view of Cottrell. Applicants respectfully traverse the rejection in light of the following remarks.

Claim 32, from which Claims 36-45 depend, is discussed above. Suarez and Huang are discussed above with respect to Claim 32. Cottrell is relied on for the alleged teaching of the

additional limitations in Claims 36-45. The alleged teaching of Cotrell does not ameliorate the underlying deficiencies of Suarez and Huang with respect to Claim 32. Thus, the hypothetical combination of Suarez, Huang and Cotrell does not teach or suggest the combination of features recited in Claims 36-45. Accordingly, the rejection of Claims 36-45 under 35 U.S.C. §103(a) based on the combination of Suarez, Huang and Cotrell is overcome, and withdrawal thereof is respectfully requested.

In view of the foregoing amendments and remarks, it is firmly believed that the present application is in condition for allowance, which action is earnestly solicited.

Respectfully submitted,

A handwritten signature in black ink, appearing to read 'P. Bernstein', with a long horizontal flourish extending to the right.

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